

positioning a patient region of interest at a first position within an MRI field of view;

generating MR images of the patient in three dimensions while located at said first position using a first high speed positioning scan MRI data acquisition pulse sequence;

locating and designating the patient region of interest position within said images;

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End* generating 3-dimensional position difference data between the designated position of the patient region of interest in the images and an optimum MR imaging position;

automatically re-positioning the patient region of interest in 3-dimensions from said first, now designated, position to an optimum MR imaging position using said position difference data; and

generating diagnostic MRI data, after the patient is re-positioned to said optimum MR imaging position, using a second diagnostic MRI data acquisition pulse sequence, different than said first sequence, to provide diagnostic images having improved precision and quality with reduced image distortion, non-uniformities and fat artifacts.
